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**Notice of Reasons for Rejection
(Translation)**

Patent Application No: 2000-402796
Drafting Date: December 4, 2003
Patent Examiner: Takashi KIMOTO 8815 3P00
Agent: Hatsushi Shimizu
Sections Applied: Sections 29 (2) and 36

The above-identified application should be rejected for the reasons stated below. If Applicant has any argument against the reasons, such argument should be submitted within three months from the dispatch date of this notice.

Reasons

1. The invention described in the claims indicated below is not patentable under Japanese Patent Law Section 29(2), because it could have easily been made by a person with ordinary skill in the art to which the invention pertains, prior to the filing of this application, on the basis of the inventions described in the documents listed below, which were distributed in Japan or elsewhere prior to the filing of this application.
2. The claims of this application fail to comply with the requirement under Japanese Patent Law Section 36(5)(ii) and (6), on the points mentioned below.

Note (for cited documents, see List of Cited Documents)

<Reason 1>

- Claim(s): 1-20
- Cited Document(s): 1-3
- Remarks:

Cited document 1 describes endpoint detection in which a thin film on the

wafer is illuminated with light through a return light conduit and the reflected light is used to measure the thickness of the thin film (see, paragraph [0027] and others)

Cited document 2 describes determination of state of polishing in which a polished surface of the wafer is illuminated with light through an optical fiber and the intensity of the reflected light is measured.

Since the rotation coupler is well known, as illustrated in cited document 3 (see the light sending devices 13 and the light receiving devices 15), one skilled in the art would easily be able to apply such well known technology to the invention described in cited documents 1 or 2.

The wavelength of the light may be conveniently selected depending on the design choice.

The shape of the fiber-optic cable may be conveniently determined by one skilled in the art, depending on the path of the light transmission.

<Reason 2>

The claims are found to have indefinite descriptions as listed below, which make the claimed invention ambiguous.

- (1) The description "a material selected from ...and combinations thereof" recited in claim 1 is unclear, since it is ambiguous which of "substrate" or "film" is of the material. In either case, the invention is ambiguous since it includes, for example, a substrate composed of a dielectric material or a film composed of a silicon material.
- (2) Claims 1 and 13 is indefinite, since the construction of the "rotation coupler" is unclear.
- (3) It is unclear what are meant by the terms "first end", "rotating end" and "second end" recited in claims 4, 15, etc. The relation between the rotation coupler and rotating fiber-optic cable is also unclear.
- (4) The term "patternless area of the film" recited in claim 5 is indefinite, and it is also unclear by what means light is directed only to the area.
- (5) It is uncertain whether "the polishing cloth" is a "polishing pad". There is no

standardization of the terms.

(6) It is unclear what are meant by the terms "bifurcated fiber-optic cable", "common leg", "stationary end" and "first bifurcated leg" as recited in claims 8, etc. The relation between the bifurcated fiber-optic cable and rotation coupler is also unclear. This reason also applies to claim 17.

(7) It is unclear what is meant by the term "bifurcated leg" in claims 9 and 18.

(8) It is unclear what are the "first rotating fiber-optic cable" and "second rotating fiber-optic cable" as recited in claim 12.

(9) It is unclear how the bifurcated fiber-optic cable may accomplish its function of making the first bifurcated leg transmit the light from the light source and making the second bifurcated leg transmit the reflected light into the photodetector. Accurate detection of the photo intensity is found to be impossible, since the reflected light is bifurcately transmitted through the two bifurcated legs.

List of Cited Documents

1. Published Unexamined Japanese Patent Application No. H04-255218
2. Japanese Utility Model Application No. H5-69311 (Published Unexamined Japanese Utility Model Application No. H02-86128) in microfilm
3. Published Unexamined Japanese Patent Application No. H05-69311

Any inquiry concerning this notice should be directed to:

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⑨ 日本国特許庁(JP)

⑪ 実用新案出願公開

⑫ 公開実用新案公報(U)

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⑤ Int. Cl.⁵

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審査請求 未請求 請求項の数 1 (全2頁)

⑭ 考案の名称 ウエハ用研磨機における研磨検査装置

⑮ 実 願 昭63-166251

⑯ 出 願 昭63(1988)12月21日

⑰ 考 案 者 安 芸 康 夫

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⑳ 実用新案登録請求の範囲

上面に研磨クロスを張設した固定定盤と、該固定定盤における研磨クロスにウエハを回転しながら押圧するホルダーとから成るウエハ研磨装置において、前記固定定盤及び研磨クロスに、前記ウエハにおける研磨表面にのぞむ検査孔を穿設し、この検査孔内に、前記ウエハにおける研磨表面に対して光を照射するための投光用光ファイバーと、前記ウエハにおける研磨表面からの反射光を受光するための受光用光ファイバーとを挿入した

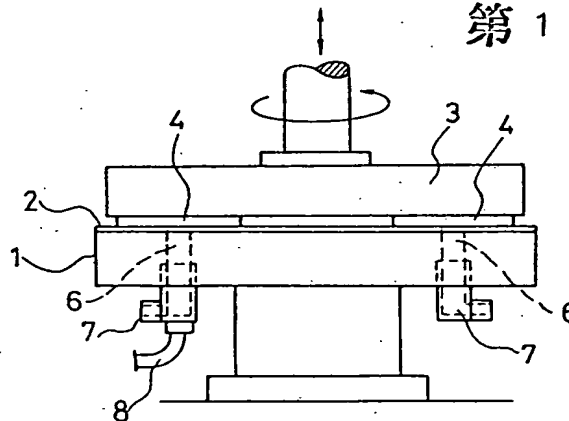
ことを特徴とするウエハ用研磨機における研磨検査装置。

図面の簡単な説明

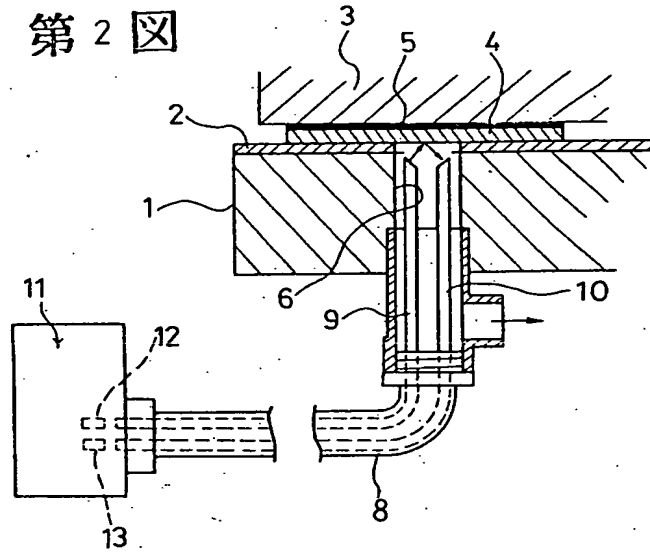
図面は本考案の実施例を示し、第1図は正面図、第2図は第1図の要部拡大断面図である。

1……固定定盤、2……研磨クロス、3……ホルダー、4……ウエハ、6……ドレイン孔、8……検査用ケーブル、9……投光用光ファイバー、10……受光用光ファイバー、11……検査回路、12……発光素子、13……受光素子。

第1図



第2図



Utility Model Application No. S63-166251

(57) Claim

A wafer polishing machine comprising a fixed surface plate provided on an upper face thereof with a polishing (abrasive) cloth in a spanning manner and a holder which presses a wafer onto the polishing cloth while rotating the polishing cloth, wherein an inspection hole facing a surface of the wafer to be polished is bored in the fixed surface plate and the polishing cloth, and a light emitting optical fiber for irradiating light to the surface of the wafer to be polished and a light receiving fiber for receiving reflected light from the surface of the wafer to be polished are inserted into the inspection hole.

Brief Description of the Drawings

Drawings show an embodiment of the present invention, where Fig. 1 is a front view and Fig. 2 is an enlarged sectional view of a main portion in Fig. 1.

1...fixed surface plate; 2...polishing cloth; 3...holder; 4...wafer; 6...drain hole; 8...inspection cable; 9...light emitting fiber; 10...light receiving fiber; 11...inspection circuit; 12...light emitting element; and 13 light receiving element.